

0053549

Bechtel Hanford

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Analysis By

Severn Trent Laboratories Richland

2800 G.W. Way, Richland, Wa 99352, (509) 375-3131

Report Nbr: 10581

SDG No.	SAF No.	CLIENT ID No.	STL ID No.
W03185	B99-014	B0XC27	9DDQEA10
		B0XC28	9DDQED10



Comments:

0001

Quanterra
2800 George Washington Way
Richland, Washington 99352-1613

509 375-3131 Telephone
509 375-5590 Fax

CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

June 13, 2000

Attention: Joan Kessner

SAF Number	:	B99-014
Date SDG Closed	:	May 25, 2000
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W03185
Data Deliverable	:	7-Day / Summary



I. Introduction

On May 25, 2000, two water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Bechtel Hanford, Inc. (BHI) specific IDs:

<u>STLR ID#</u>	<u>BHI ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
9DDQEA10	B0XC27	WATER	5/25/00
9DDQED10	B0XC28	WATER	5/25/00

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information; analytical results and the appropriate associated statistical errors.

The requested analysis was: **Gas Proportional Counting**
Total Strontium by method RICH-RC-5006

Bechtel Hanford, Inc.
June 13, 2000
Page 2

III. Quality Control

The analytical results for each analysis performed under SDG W03185 includes a minimum of two Laboratory Control Samples (LCS) and one method (reagent) blank. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments


Gas Proportional Counting

Total Strontium by method RICH-RC-5006:

The achieved MDA for sample B0XC27 does not meet the CRDL due to a reduced volume analyzed. The detected activity exceeds the achieved MDA and the data are accepted for reporting. Except as noted, the laboratory control samples, batch blank and sample results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:


Jackie Waddell
Project Manager

SAMPLE RESULTS

LAB NAME: STL Richland

SDG: /RPT GRP: W03185 / 10581

LOT,RPT DB ID: J0E250303-1 9DDQEA10

MATRIX: WATER

CLIENT ID: B0XC27

DATE RECEIVED: 5/25/2000 3:15:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT- CH
STRONTIUM	2.10E+03		4.4E+01	6.0E+02	8.30E+00	pCi/L	97.70%	RICHRC5006	DDQEA	0147322

Number of Results:

SAMPLE RESULTS

LAB NAME: STL Richland

SDG: /RPT GRP: W03185 / 10581

LOT,RPT DB ID: J0E250303-2 9DDQED10

MATRIX: WATER

CLIENT ID: B0XC28

DATE RECEIVED: 5/25/2000 3:15:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT- CH
STRONTIUM	3.65E+02		1.2E+01	1.1E+02	3.19E+00	pCi/L	100.00%	RICHRC5006	DDQED	0147322

Number of Results:

BLANK RESULTS

LAB NAME: STL Richland

SDG /RPT GRP: W03185 / 10581

LOT,RPT DB ID: JOE260000-322 DDT0Q11B

MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	RPT UNIT	YIELD	METHOD NUMBER	WORK ORDE	BAT- CH
STRONTIUM	8.87E-01	U	1.6E+00	1.6E+00	3.52E+00	pCi/L	93.00%	RICHRC5006	DDT0Q	0147322

Number of Results:

LABORATORY CONTROL SAMPLE**LAB NAME:** STL Richland**SDG: /RPT GRP:** W03185 / 10581**LAB SAMPLE ID:** DDT0Q12S**MATRIX:** WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
STRONTIUM	5.96E+01		5.0E+00	1.8E+01	3.41E+00	pCi/L	92.70%	6.84E+01	87.15%

Number of Results:

LABORATORY CONTROL SAMPLE

LAB NAME: STL Richland

SDG: /RPT GRP: W03185 / 10581

LAB SAMPLE ID: DDT0Q13S

MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
STRONTIUM	6.00E+01		4.9E+00	1.8E+01	3.28E+00	pCi/L	96.00%	6.78E+01	88.57%

Number of Results: 1

STL RICHLAND
Data Review Checklist
RADIOCHEMISTRY

Lot Number: <u>30E250303</u>				
Client ID: <u>BHZ</u>				
Due Date: <u>6-1-00</u>				
QC Batch Number: <u>0147322</u>			SDG Number: <u>3185</u>	
Method Test Parameter: <u>TOTAL Sr</u>				
Matrix: <u>Water</u>				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Calibration				
1. Is the calibration documentation included where applicable?			✓	✓
B. Sample Analysis				
1. Are the sample yields within acceptance criteria?	✓			
2. Were all sample holding times met?	✓			
3. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓			
C. QC Samples				
1. Is the blank yield within acceptance criteria?	✓			
2. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓			
3. Does the blank result meet the Contract criteria?	✓			
4. Is the blank result < the Contract Detection Limit?	✓			
5. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓	
6. Is the LCS result within acceptance criteria?	✓			
7. Is the LCS yield within acceptance criteria?	✓			
8. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓			
9. Do the MS/MSD results and yields meet acceptance criteria?			✓	
10. Do the duplicate sample results and yields meet acceptance criteria?			✓	
D. Other				
1. Are all Nonconformances included and noted?			✓	
2. Are all required forms filled out?	✓			
3. Was the correct methodology used?	✓			
4. Was transcription checked?	✓			
5. Were all calculations checked at a minimum frequency?	✓			
6. Were units checked?	✓			✓

Comments on any "No" response: Results > MDA < RDL

First Level Review: Pam Kienitz Date: 6-1-00

Second Level Review: Jackie Waldeck Date: 6/1/00

CHAIN OF CUSTODY

Q-27040

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B99-014-3		Page #Error of #Error												
Collector: RICHARD PEETER		Company Contact Julian Laurenz		Telephone No. 372-9582		Project Coordinator TRENT, SJ		Price Code 1D Data Turnaround 7 Days												
Project Designation 100-NR-2 Pump & Treat Operational Sampling		Sampling Location 100-NR-2		SAF No. B99-014		Air Quality <input type="checkbox"/>														
Ice Chest No. N/A		Field Logbook No. EL 1345-1		COA R10NR2C560		Method of Shipment Govt Vehicle														
Shipped To Quanterra Incorporated		Offsite Property No.		Bill of Lading/Air Bill No.																
POSSIBLE SAMPLE HAZARDS/REMARKS CONTAMINATION Special Handling and/or Storage			Preservation	N/A																
			Type of Container	P																
			No. of Container(s)	2																
			Volume	500ml																
SDX W03185 Joe 250303			SAMPLE ANALYSIS		Due 6-1		SR90													
Sample No.	Matrix *	Sample Date	Sample Time																	
BOX C 27	WATER	5-25-00	1108	X	DDQ	EA														
BOX C 28	WATER	5-25-00	1108	X	DDQ	ED														
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *						
Relinquished By Richard Peeter		Date/Time 5/25/00 1140		Received By [Signature]		Date/Time 5/25/00 1140								S=Soil SE=Soil/Stone SO=Solid S=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Timber W=Wipe L=Liquid V=Vegetation X=Other						
Relinquished By [Signature]		Date/Time 5/25/00		Received By [Signature]		Date/Time 5/25/00														
Relinquished By		Date/Time		Received By		Date/Time														
Relinquished By		Date/Time		Received By		Date/Time														
Relinquished By		Date/Time		Received By		Date/Time														
Relinquished By		Date/Time		Received By		Date/Time														
Relinquished By		Date/Time		Received By		Date/Time														
Relinquished By		Date/Time		Received By		Date/Time														
LABORATORY SECTION		Received By		Title		Date/Time														
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time														

1001

Date/Time Received: 5/25/00 1515

SDG#:

W03185

Work Order Number: JOE250303

SAF#:

B99-014

Shipping Container ID: N/A

Chain of Custody #:

B99-014-3

1. Outermost shipping container damaged? Yes ☐ No ☒
2. Custody Seals on shipping container intact? Yes ☒ No ☐
3. Custody Seals dated and signed? Yes ☒ No ☐
4. Chain-of-Custody record present? Yes ☒ No ☐
5. Chain-of-Custody includes the following information:
- Client name Yes ☒ No ☐
 - Project name or number Yes ☒ No ☐
 - Sample date/time for each sample Yes ☒ No ☐
 - Container types, sizes and number of containers Yes ☒ No ☐
 - Short description of sample, i.e., matrix Yes ☒ No ☐
 - Analyses requested Yes ☒ No ☐
 - Preservation used or "none" or N/A if not applicable Yes ☒ No ☐
 - Date and time of relinquish and receipt Yes ☒ No ☐
 - Signatures of those persons relinquishing and receiving Yes ☒ No ☐
6. Sample numbers on chain of custody match those on sample containers? Yes ☒ No ☐
7. Collection date and date of laboratory receipt are within project specific holding time requirements? (2) Yes ☒ No ☐
8. Cooler temperature: N/A
9. Vermiculite/packing materials is: Wet ☐ Dry ☒

10. Samples have: tape hazard labels
custody seals appropriate sample labels

11. Samples are: in good condition leaking
broken have air bubbles

12. Were any anomalies identified in sample receipt? Yes ☐ No ☒
13. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: West

Date:

5/25/00 1515

Telephone/Fax/Emailed to: _____

On _____

By _____

(13) $5/2\sqrt{a}$

1

0013

COC Signature Page

Lot or Batch #:	0147322	Initials/Date	Procedure #
Released By	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
Received	<i>5-26-00</i>	<i>[Signature]</i>	<i>RICHRC5006</i>
Released By	<i>5-31-00</i>		n/a
Received	<i>5/31/00</i>	<i>[Signature]</i>	<i>RICHRC0003</i>
Released By	<i>6/1/00</i>		n/a
Received	<i>5-6-1-00</i>	<i>[Signature]</i>	<i>RADCAL V2-8-2-1</i>
Released By	<i>5-6-1-00</i>		n/a
Received	<i>PK6-1-00</i>	<i>[Signature]</i>	<i>RICHRC0002</i>
Released By	<i>PK6-1-00</i>		n/a
Received			
Released By			n/a
Received			
Released By			n/a
Received			

RC-131, Rev.1, 6/99

RQC053

Severn Trent Laboratories, Inc.
Information Sheet Rad PrepRun Date: 5/30/00
Time: 10:51:53Parent Batch:
Associated Batches:*****
* QC BATCH: 0147322 *

Page: 1

TH: Total Strontium by GPC
CG: Sr-Total Prp/SepRC5006
SI: CLIENT: HANFORD

Analytical Due Date: 6/01/00

Project Manager: JW2

Lot#	Analyst Due	Client Name	Geometry	Count	Time	Mid/Ave Date/Time	Tracer ID	CRDL	Units	Screen Info - (Ci)	PM
Work Order	Client Matrix	Aliquot					Spike ID			Alpha Beta	Bin
JOE250303-001 DDQEA-1-01 WATER Comments: WATER	6/01/00	Bechtel Hanford, .0000		.000	5/25/00 11:08			2.00E+00	pCi/L	**NYS 63-05/00	JW2
JOE250303-002 DDQEA-1-01 WATER Comments: WATER	6/01/00	Bechtel Hanford, .0000		.000	5/25/00 11:08			2.00E+00	pCi/L	**NYS 63-05/00	JW2
JOE260000-322 B DDTQ-1-01 WATER Comments:	6/01/00	Bechtel Hanford,			5/25/00 11:08			2.00E+00	pCi/L	**NA	JW2
JOE260000-322 C DDTQ-1-02 WATER Comments:	6/01/00	Bechtel Hanford,			5/25/00 11:08		2		pCi/L	**NA	JW2
JOE260000-322 C DDTQ-1-03 WATER Comments:	6/01/00	Bechtel Hanford,			5/25/00 11:08		2		pCi/L	**NA	JW2

Total Number of Samples In Batch: 00005

Batch Information:

Dry Wt: N

Decay Correct: Y

Blank Sub: None

Call In:

Uncert: Both

Sigma: 1.960

ODR: Target List + Other Detected

BLANK CRDL
Strontium 90

2.00E+00

Tracer Yield
Strontium Trace (020-105)Type
RPDQC Control Limits

** NYS = Not Yet Screened

** NA = Not Applicable

** Other = Other than Gross Alpha or Gross Beta

++ Indicates that Batch Information has changed for this sample. Print worksheet for details.

0015